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NOTICE OF ALLOWANCE AND FEE(S) DUE

26138 7590 11/30/2009

Joseph R. Baker, APC
Gavrilovich, Dodd & Lindsey LLP
4660 La Jolla Village Drive, Suite 750
San Diego, CA 92122

EXAMINER

GUPTA, ANISH

ART UNIT

PAPER NUMBER

1654

DATE MAILED: 11/30/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,552	08/29/2006	Richard L. Gallo	00015-019US/SD2004-043-1	8944

TITLE OF INVENTION: HUMAN CATHRELICIDIN ANTIMICROBIAL PEPTIDES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	03/01/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE** OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

26138 7590 11/30/2009

Joseph R. Baker, APC
 Gavrilovich, Dodd & Lindsey LLP
 4660 La Jolla Village Drive, Suite 750
 San Diego, CA 92122

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

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TITLE OF INVENTION: HUMAN CATHRELICIDIN ANTIMICROBIAL PEPTIDES

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nonprovisional	YES	\$755	\$300	\$0	\$1055	03/01/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
GUPTA, ANISH	1654	530-326000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 495 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 495 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability**Application No.**

10/575,552

Applicant(s)

GALLO ET AL.

Examiner

ANISH GUPTA

Art Unit

1654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8-7-09.
2. ☒ The allowed claim(s) is/are 2,4,6,8,11-13,15,19,21 and 24-26.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Anish Gupta/
Primary Examiner, Art Unit 1654

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joseph Baker on November 19, 2009.

The application has been amended as follows:

Claims 1, 3, 5, 7, 9-10, 14, 16-18, 20, 22-23 are canceled.

The following claims have been amended.

2. ~~The Δ method of claim 1, for inhibiting the spread and/or reducing the risk of infection of a virus comprising contacting a virus with an inhibiting effective amount of a cathelicidin functional fragment~~, wherein the cathelicidin functional fragment ~~comprises~~ consists of 16-~~[[36]]20 or 26-30~~ amino acids in length; and contains the sequence ~~sequence~~ $X_1X_2X_3X_4X_5X_6IKX_7FX_8X_9X_{10}LX_{11}P$ (SEQ ID NO:1), wherein X_1 , X_2 , and X_6 are individually K or R; wherein X_3 is I or K; wherein X_4 is V or G; wherein X_5 is Q or R; wherein X_7 , X_9 , X_{10} , and X_{11} are each individually any amino acid; wherein X_8 is L or F and wherein the polypeptide comprises antimicrobial and/or antiviral activity.
4. The method of claim ~~[[3]]~~ 2, wherein the peptide comprises of a sequence selected from the group consisting of:
- (a) KRIVQRIKDFLRNLVP (SEQ ID NO:13);
 - (b) KRIVQRIKDFLRNLVPR (SEQ ID NO:14);
 - (c) KRIVQRIKDFLRNLVPRT (SEQ ID NO:15);

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- (d) KRIVQRIKDFLRNLVP RTE (SEQ ID NO:16); and
- (e) KRIVQRIKDFLRNLVP RTES (SEQ ID NO:17).

6. The method of claim [[6]] 2, wherein the peptide comprises a sequence selected from the group consisting of:

- (a) KSKEKIGKEFKRIVQRIKDFLRNLVP (SEQ ID NO:18);
- (b) KSKEKIGKEFKRIVQRIKDFLRNLVPR (SEQ ID NO:19);
- (c) KSKEKIGKEFKRIVQRIKDFLRNLVPRT (SEQ ID NO:20);
- (d) KSKEKIGKEFKRIVQRIKDFLRNLVP RTE (SEQ ID NO:21); and
- (e) KSKEKIGKEFKRIVQRIKDFLRNLVP RTES (SEQ ID NO:22).

8. ~~The Δ method of claim 7, for inhibiting the spread and/or reducing the risk of infection of a virus comprising contacting a virus with an inhibiting effective amount of a cathelicidin functional fragment,~~ wherein the ~~peptide fragment comprises~~ consists of a sequence selected from the group consisting of:

- (a) RKSKEKIGKEFKRIVQRIKDFLRNLVP (SEQ ID NO:23);
- (b) RKSKEKIGKEFKRIVQRIKDFLRNLVPR (SEQ ID NO:24);
- (c) RKSKEKIGKEFKRIVQRIKDFLRNLVPRT (SEQ ID NO:25);
- (d) RKSKEKIGKEFKRIVQRIKDFLRNLVP RTE (SEQ ID NO:26);
- (e) RKSKEKIGKEFKRIVQRIKDFLRNLVP RTES (SEQ ID NO:27)
- (f) LGDFFRKSKEKIGKEFKRIVQRIKDFLRNLVP RTES (SEQ ID NO:28).

15. ~~The Δ method of claim 14, for treating atopic dermatitis comprising contacting a subject having or suspected of having atopic dermatitis with an inhibiting effective amount of a cathelicidin functional fragment,~~ wherein the cathelicidin functional fragment ~~comprises~~ consists of 16-[[36]]20 or 26-30 amino acids in length; and contains the sequence [[NH₂-]]X₁X₂X₃X₄X₅X₆[[KX₇FX₈X₉X₁₀LX₁₁P]]~~[-COOH]]~~ (SEQ ID NO:1), wherein X₁, X₂, and X₃ are individually K or R; wherein X₄ is I or K; wherein X₅ is V or G; wherein X₆ is Q or R; wherein X₇, X₉, X₁₀, and X₁₁ are each individually any amino acid; wherein X₈ is L or F and wherein the polypeptide comprises antimicrobial and/or antiviral activity.

17. The method of claim [[16]] 15, wherein the peptide comprises a sequence selected from the group consisting of:

- (a) $[[\text{NH}_2]\text{KRIVQRIKDFLRNLVP}[-\text{COOH}]]$ (SEQ ID NO:13);
- (b) $[[\text{NH}_2]\text{KRIVQRIKDFLRNLVPR}[-\text{COOH}]]$ (SEQ ID NO:14);
- (c) $[[\text{NH}_2]\text{KRIVQRIKDFLRNLVPRT}[-\text{COOH}]]$ (SEQ ID NO:15);
- (d) $[[\text{NH}_2]\text{KRIVQRIKDFLRNLVP RTE}[-\text{COOH}]]$ (SEQ ID NO:16); and
- (e) $[[\text{NH}_2]\text{KRIVQRIKDFLRNLVPRTES}[-\text{COOH}]]$ (SEQ ID NO:17).

19. The method of claim [[18]] 15, wherein the peptide comprises a sequence selected from the group consisting of:

- (a) $[[\text{NH}_2]\text{KSKEKIGKEFKRIVQRIKDFLRNLVP}[-\text{COOH}]]$ (SEQ ID NO:18);
- (b) $[[\text{NH}_2]\text{KSKEKIGKEFKRIVQRIKDFLRNLVPR}[-\text{COOH}]]$ (SEQ ID NO:19);
- (c) $[[\text{NH}_2]\text{KSKEKIGKEFKRIVQRIKDFLRNLVPRT}[-\text{COOH}]]$ (SEQ ID NO:20);
- (d) $[[\text{NH}_2]\text{KSKEKIGKEFKRIVQRIKDFLRNLVP RTE}[-\text{COOH}]]$ (SEQ ID

NO:21); and

- (e) $[[\text{NH}_2]\text{KSKEKIGKEFKRIVQRIKDFLRNLVPRTES}[-\text{COOH}]]$ (SEQ ID

NO:22).

21. ~~The method of claim 20, for treating atopic dermatitis comprising contacting a subject having or suspected of having atopic dermatitis with an inhibiting effective amount of a cathelicidin functional fragment~~, wherein the ~~peptide fragment comprises~~ consists of a sequence selected from the group consisting of:

- (a) $[[\text{NH}_2]\text{RKSKEKIGKEFKRIVQRIKDFLRNLVP}[-\text{COOH}]]$ (SEQ ID NO:23);
- (b) $[[\text{NH}_2]\text{RKSKEKIGKEFKRIVQRIKDFLRNLVPR}[-\text{COOH}]]$ (SEQ ID NO:24);
- (c) $[[\text{NH}_2]\text{RKSKEKIGKEFKRIVQRIKDFLRNLVPRT}[-\text{COOH}]]$ (SEQ ID

NO:25);

- (d) $[[\text{NH}_2]\text{RKSKEKIGKEFKRIVQRIKDFLRNLVP RTE}[-\text{COOH}]]$ (SEQ ID

NO:26);

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(e) [NH2]RKSKEKIGKEFKRIVQRIKDFLRNLVPRTES[COOH] (SEQ ID NO:27).

(f) LGDEFRKSKEKIGKEFKRIVQRIKDFLRNLVPRTES (SEQ ID NO:28).

24. The method of claim [[14]] 15 or 21, wherein the subject also is infected with a viral infection, wherein the virus is selected from a pox virus, a herpes virus, vaccinia virus, and pappiloma virus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anish Gupta whose telephone number is (571)272-0965. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang, can normally be reached on (571) 272-0562. The fax phone number of this group is (571)-273-8300.

/Anish Gupta/
Primary Examiner, Art Unit 1654